

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
14 November 2002 (14.11.2002)

(10) International Publication Number
WO 02/090232 A1

(51) International Patent Classification⁷: B66B 11/08, (74) Agent: TANDBERGS PATENTKONTOR AS; Boks 7/06 // 7:02 7085, N-0306 Oslo (NO).

(21) International Application Number: PCT/NO01/00187

(22) International Filing Date: 4 May 2001 (04.05.2001)

(25) Filing Language: English

(26) Publication Language: English

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

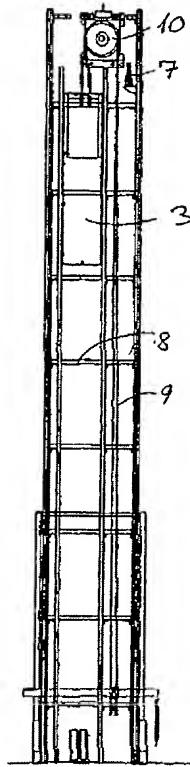
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

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(54) Title: ELEVATOR STRUCTURE



(57) Abstract: Elevator structure in which the hoist equipment such as the counter weight (3), the vertical main rails (1), and the ropes (9) are secured to one and the same wall of the hoist way thereby allowing entrance to the lift cage from three sides, whereby the vertical main rails (1) being secured to a plurality of securing clamps (8) fixed to the hoist way wall, the main rails (1) thereby facing away from each other in a plane substantially parallel to the wall, the hoist cage being guided on the main rails (1) by guiding shoes secured to the hoist cage, guiding rails (2) for the counter weight (3) being secured to the securing clamps (8) respectively to arms fixed to the securing clamps (8) guiding the counter weight (3) in one end of the securing clamps (8) leaving open space for the ropes (9) inside the guiding clamps (8).

WO 02/090232 A1

WO 02/090232 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Elevator structure

5 The present invention is related to an elevator structure.

Attempts have been made to arrange machine equipment and other equipment on one side of the lift cage, thereby to utilize the full height of the hoist way for transportation of the lift cage and to allow for entrance to the lift cage from three sides. Traditionally such equipment has been arranged in a separate machine room on top of the hoist 10 way.

Examples on such structures are described in PCT/EP00/03752, DE 19 546 590, DE 19 536 994 and DE 2 163 705.

With the lift structure according to the present invention substantial improvements are achieved in the relation to known lift structures of the above type, especially 15 are substantial savings of space achieved in addition to also further advantages. This is achieved with the lift structure according to the present invention as defined with the features stated in the claims.

In the drawing figure 1 discloses schematically a vertical section through a hoist way, figure 2 discloses a ground view of part of the hoist way, figure 3 discloses a section 20 corresponding to figure 1, however, for a lift having larger capacity and figure 4 discloses a ground view of the hoist way in figure 3, corresponding to figure 2.

Main rails 1 are with securing clamps 8 connected with the one wall in the hoist way. The main rails 1 are secured to two securing clamps 8 facing each other and extend away from each other.

25 An elevator cage is secured to a support framework 4, which is guided along the rails 1 with not disclosed guiding shoes. A safety device 12 is connected with the framework 4 of the cage at both sides for activation onto the two rails 1. The safety devices 12 are activated by a transmission 13 being activated by a speed governor 7.

A hoisting machine 10 is secured to the wall in the hoist way at the top of the 30 hoist way by suitable bolts in rails moulded in the wall and arranged between the main rails 1. Thereby the height of the hoist way may be limited to a minimum dimension, which is necessary for rescue purposes above the elevator generally, and the necessity to continue the hoist way through the roof of a building thereby is avoided.

35 A counterweight 3 is guided in guiding rails 2 especially for the counterweight, being secured to the securing clamps 8 and to securing angles 11 which again are connected with the securing clamps 8. Ropes 9 are connected with the counterweight 3 through a securing plate 6 on the top of the counterweight 3 and extend around the wheels of the elevator machine and down to a beam 5 being connected with the underside

of the supporting frame work 4 of the hoist cage and protruding into the space between the securing clamps 8.

As disclosed in figure 3 and 4 the elevator structure according to the present invention may be adjusted to elevators for larger loads by using two sprockets 14 of which 5 one is secured to the hoist cage and one is secured to the counterweight 3.

With the elevator structure according to the present invention substantial savings 10 of space in the hoist way are achieved, substantially due to the orientation and the arrangement of the main rails 1. By arranging the guiding 2 for the counterweight 3 close to one of the arms of the securing clamp 8, i.e. not symmetrically in the securing clamps 8, space is obtained for the ropes 9 between the guiding rails 1, also by elevators for larger 15 loads.

The substantial free space obtained in the hoist way in relation to known hoist 15 designs means that the counterweight 3 may be shaped having a large dimension in the depth and a small dimension in the width. A narrow counterweight 3 has a relatively large area due to the large depth dimension and therefore a high weight on a small height. This is of considerable importance for the total height of the hoist way as the machine 10 is arranged between the guiding rails 1, secured to the wall and limits the movements upwardly of the counterweight 3.

Patent Claims

5 1. Elevator structure in which the hoist equipment such as the counter weight (3), the vertical main rails (1), and the ropes (9) are secured to one and the same wall of the hoist way thereby allowing entrance to the lift cage from three sides, **characterized in** the vertical main rails (1) being secured to a plurality of securing clamps (8) fixed to the hoist way wall, the main rails (1) thereby facing away from each other in a plane sub-
10 stantially parallel to the wall, the hoist cage being guided on the main rails (1) by guiding shoes secured to the hoist cage, guiding rails (2) for the counter weight (3) being secured to the securing clamps (8) respectively to arms fixed to the securing clamps (8) guiding the counter weight (3) in one end of the securing clamps (8) leaving open space for the ropes (9) inside the guiding clamps (8).

15 2. Elevator structure according to claim 1, **characterized in** the hoisting machine (10) being secured to the wall above the guiding means (2) for the counter weight (3).

20 3. Elevator structure according to claims 1-2, **characterized in** the ropes (9) being secured to the counter weight (3) with one end and to a beam (5) secured to the under side of the hoist cage with the other end, the beam (5) thereby protruding from the hoist cage into the open space between the securing clamps (8).

4. Elevator structure according to claims 1-2, **characterized in** both ends of the ropes (9) being connected with the wall near the hoisting machine (10) running around one sprocket (14) secured to the counter weight (3) and one sprocket (14) secured to the beam (5).

